



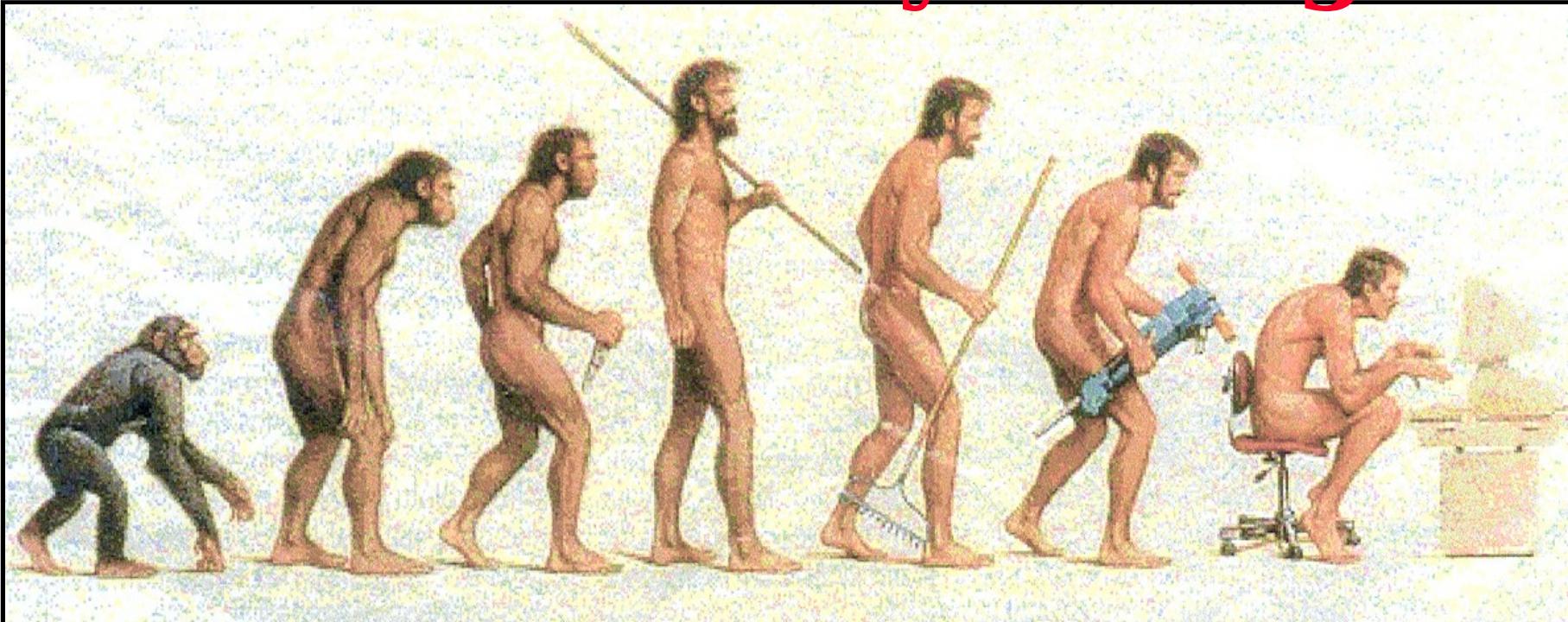
**HEALTH  
AFFAIRS**

# Ergonomic Principals: Overseas Private Investment Corporation (OPIC)

Jerome D. Lyons  
Jennifer Geyer

Computer/Electronic Accommodations  
Program

**Somewhere...  
Somehow...  
Something...  
Went Terribly Wrong!**





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# The Scope of Your ~~Challenge~~



- MSD's as a source of disability cost \$254 billion dollars in 1999      Natl. Center for Health Statistics
- RSI's account for 70% of all job-related claims      D.O.L. Statistics
- Average cost per claim is \$29,000      Natl. Council on Comp. Ins.
- Three-quarters of all jobs require computer use      Pascarelli and Quilter
- One-third of all work-related lost workday injuries are from MSD's      Natl. Center for Health Statistics



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# How Do You Know if You Have a Problem?

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- Do your employees attempt to find their own solutions?
- Do they wear 'body armor' or keep Advil at their desks?
- Do you just pick and choose from catalogues?
- Do you provide the same solution for everybody?
- Do you have a disability that is currently being impacted by ergonomics?



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# Office Ergonomics

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- Ergonomics is the field of study that seeks to fit the job to the person, rather than the person to the job.
- This process is achieved by the evaluation and design of workplaces, environments, job tasks, equipment, and processes in relationship to human capabilities and interactions in the workplace.





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# Disability Prevention



## The Five Most Dangerous Words in the English Language

MAYBE  
IT  
WILL  
GO  
AWAY





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# How Do We Assess a ~~Situation?~~



- Look at the end-user's physical characteristics
- Current furniture components
- Equipment used
- The job tasks
- The way these variables interface with the user determines the level of risk



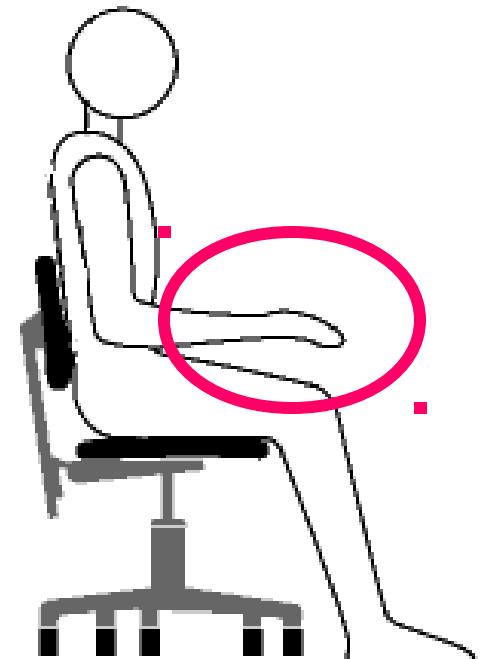
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# Wrist Pain or ~~Discomfort~~

## Possible solution for wrist pain or discomfort include:

- Keep wrists in neutral position by adjusting the keyboard height and angle.
- Ensure keyboard and pointing device are on the same surface.
- Position the keyboard so that the wrists aligned with the forearm to minimize awkward bending from side to side.
- Move the arm rather than overstretch the palm (especially little finger reaches) to access control keys.





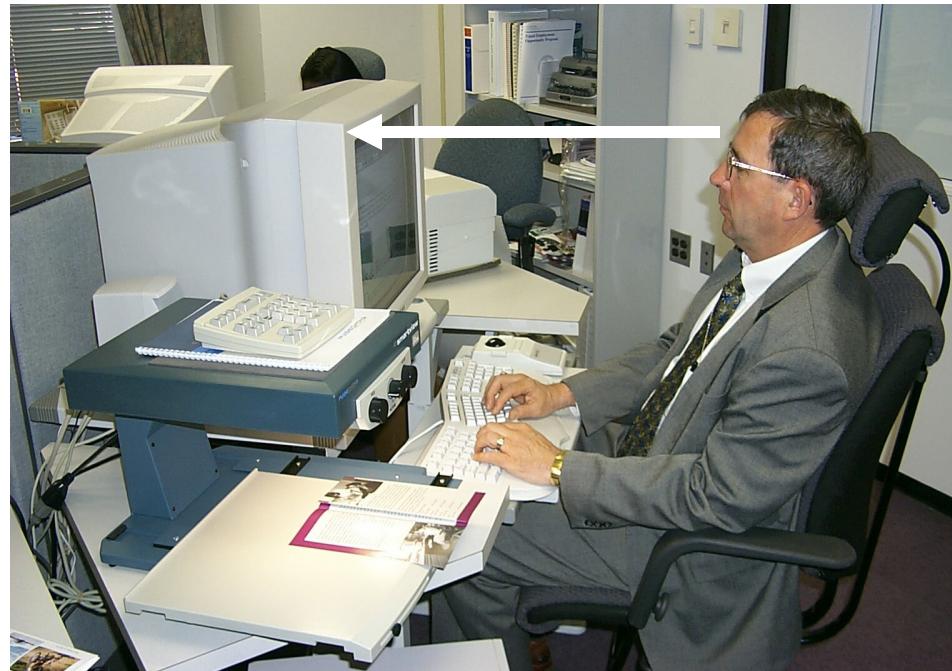
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# Neck Pain or Discomfort



## Possible solution for neck pain or discomfort include:

- Raise/lower the monitor so that the top of the screen is at eye level documents or use a document holder to minimize leaning forward.
- Raise/lower the chair or work height to prevent awkward positions.
- Keep work in the midline of the body to avoid twisting the trunk or neck.





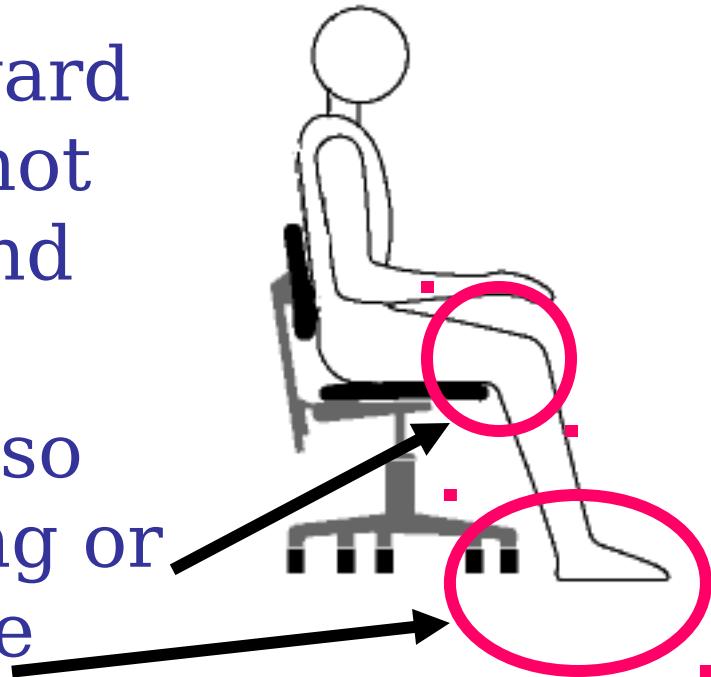
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# Leg Pain or Discomfort



Possible solution for leg pain or discomfort include:

- Shorten the seat pan or move the backrest forward so that the seat pan is not applying pressure behind the knees.
- Lower the chair height so the legs are not dangling or use a footrest to provide support.





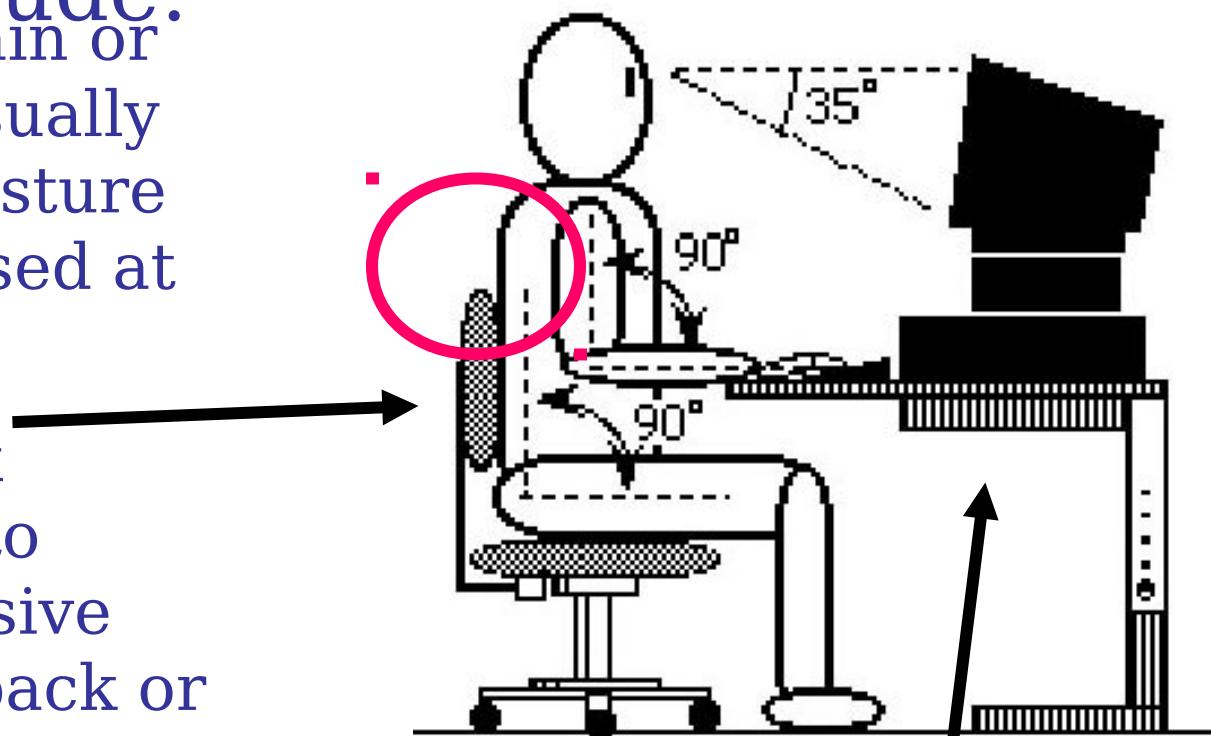
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# Back and Leg Pain or Discomfort



Possible solution for back pain or discomfort include:

- Back and leg pain or discomfort is usually attributed to posture and the chair used at your
- Adjust the work surface height to minimize excessive arching of the back or slouching





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# Back Pain or ~~Discomfort~~



- Fully adjustable chairs are essential to an ergonomic environment
- Adjust the backrest of the chair to support the low back curve.
- Sit with the buttocks back in the chair rather than on the edge to maximize chair back support





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# Workstation Review

**CAP**  
COMPUTER / ELECTRONIC  
ACCOMMODATIONS  
PROGRAM

**Body:**  
Centered in front of the monitor and keyboard

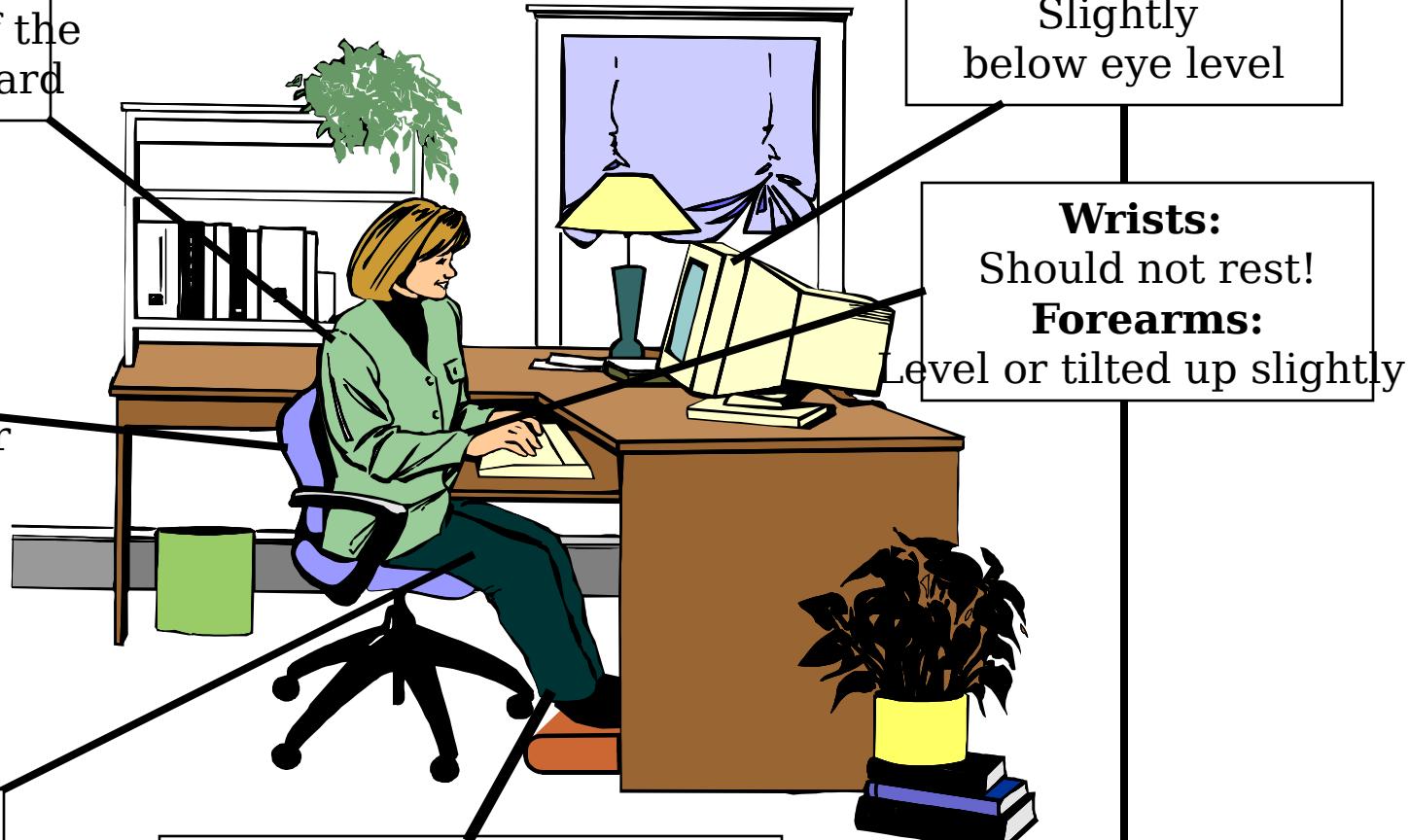
**Lower back:**  
Supported by chair

**Legs:**  
Horizontal

**Feet:**  
Resting flat on the floor or footrest

**Screen top:**  
Slightly below eye level

**Wrists:**  
Should not rest!  
**Forearms:**  
Level or tilted up slightly



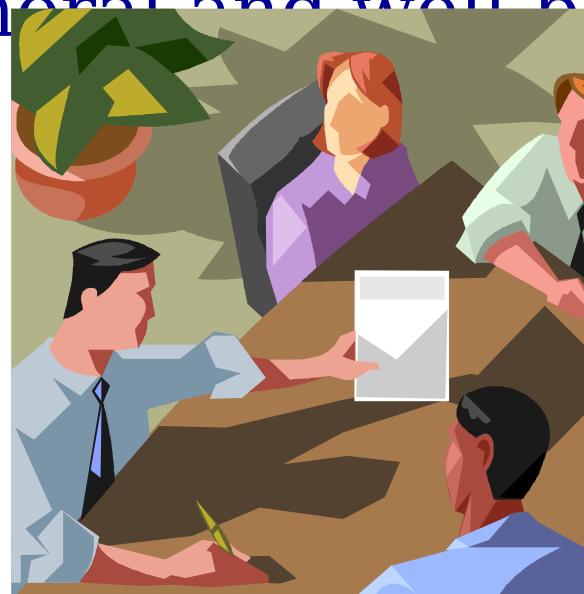


# Ergonomic Program Benefits



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- Reduces repetitive injuries
- Decrease/cut lost work time and absenteeism
- Increase productivity
- Improve moral and well-being of workers





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# Ergonomic Resources

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## CAP Resources

- CAP Website
  - [www.tricare.osd.mil/cap](http://www.tricare.osd.mil/cap)
- CAP Technology Evaluation Center

## Other Resources

- U.S. Department of Labor Occupational Safety and Health Administration (OSHA)
  - <http://www.osha-slc.gov/SLTC/ergonomics>



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# Background



- CAP was established in 1990 as DoD's centrally funded program to provide accommodations
- National Defense Authorization Act

Assistive Technology Accommodations Program (10 U.S.C. § 1582 SEC. 1102)

"The Secretary of Defense may provide assistive technology, devices and services...to...any department or agency of the Federal Government...for its employees with disabilities...upon request of the head of the agency."

- Since its inception, CAP has filled over 30,000 requests for accommodation



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# CAP Mission

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To provide assistive technology and accommodations to ensure people with disabilities have equal access to the information environment and opportunities in the Department of Defense and throughout the Federal Government



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# FY03 Partnerships



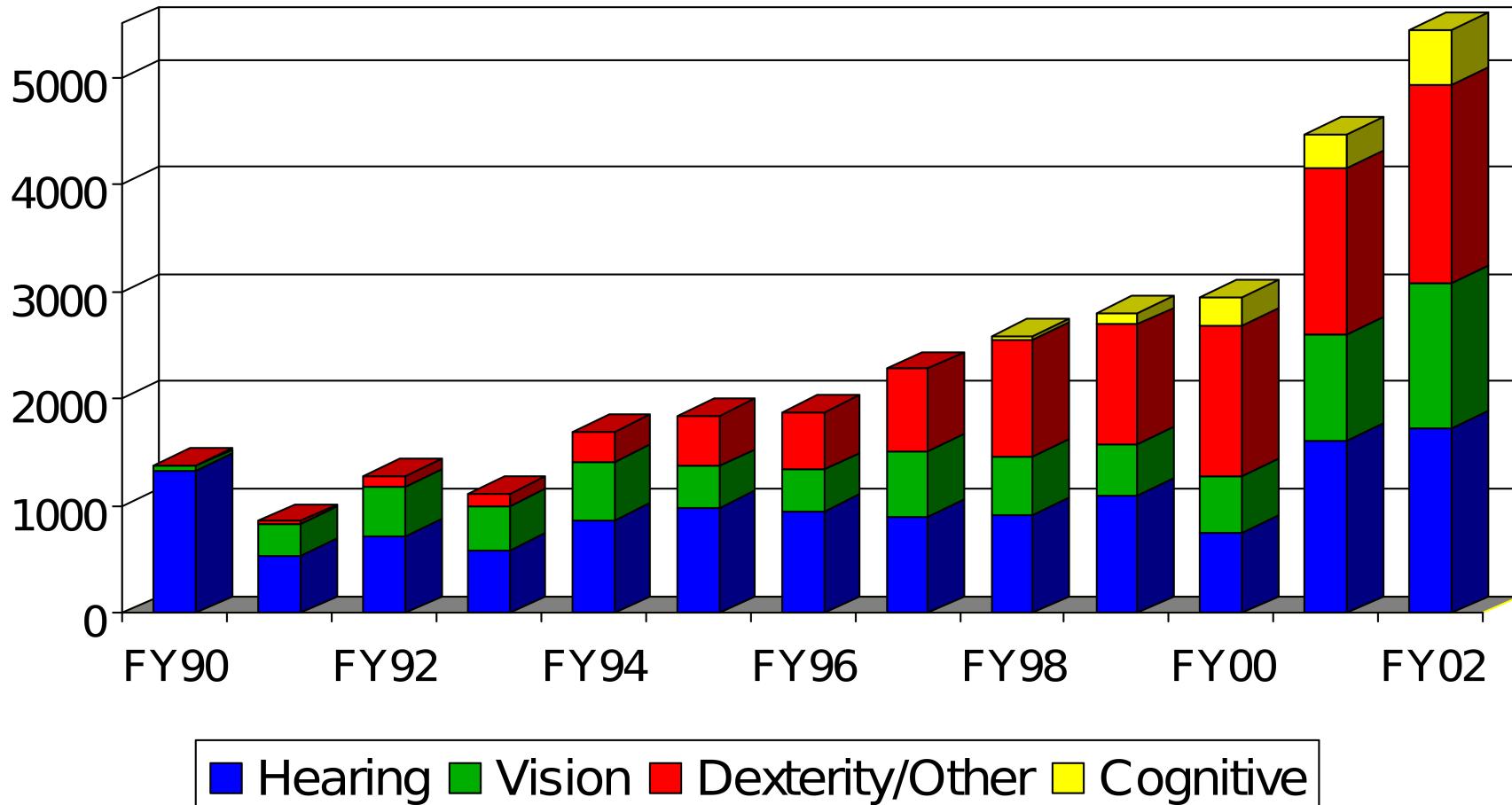
- CAP has 54 partners as of March 2003
  - Department of Agriculture
  - Department of Commerce
  - Department of Energy
  - Department of Interior
  - Department of Justice
  - Department of Labor
  - Department of Treasury
  - Department of Veterans Affairs
  - Equal Employment Opportunity Commission
  - Executive Office of The President
  - Federal Communications Commission
  - **Overseas Private Investment Corporation**
  - Office of Personnel Management
  - National Aeronautics and Space Administration
  - Securities and Exchange Commission
  - Small Business Administration



# CAP Accommodations Profile by Disability (FY90-FY02)



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# Healthy Work Practices Program



## Disability Prevention

- Target Audience
  - Employees, supervisors, and employees with disabilities that may develop ergonomic disabilities
- HWPP Information Dissemination
  - Training / workshops
  - CAP Website
  - HWPP Fact Sheet
  - Workplace Ergonomics Reference Guide & Slide Rule
- Needs Assessments and Demonstrations
  - CAP Website Needs Assessment Process
  - Individual/group evaluations
  - CAP Technology Evaluation Center (CAPTEC)



## Disability Accommodation

- Target Audience
  - Individuals that have developed a Musculoskeletal Disorder, Cumulative Trauma Disorder, Repetitive Stress Injury or Carpal Tunnel Syndrome



[CAP Services](#)[Accommodation Process](#)[CAP Request Forms](#)[CAPTEC](#)
[ABOUT CAP PROGRAMS](#)  
[WHAT'S NEW](#)  
[RESOURCES](#)

## Accommodation Process

- [\*\*Overview\*\*](#)
- [\*\*Needs Assessment\*\*](#)
- [\*\*Accommodation Solution\*\*](#)
- [\*\*Request Submission\*\*](#)
- [\*\*Training\*\*](#)
- [\*\*Customer Care\*\*](#)



The success of the CAP accommodation process begins with your involvement in the identification of the appropriate accommodation solutions. In order for CAP to expedite your request, follow the five step process: 1) needs assessment, 2) Accommodation Solution, 3) complete and submit the CAP Request Form, 4) identify if training is required and 5) feedback on customer service you received from CAP.

For additional information, go to [CAP Services](#).

### Needs Assessment

Examine your job requirements and functional capabilities.

### Accommodation Solution

Assistive technologies and related services that might be right for you.

### Request Submission

Now that you have determined a solution, request it here!

### Training

Learn how to best use your assistive technology or to arrange other training needs.

### Customer Care

Discover how CAP ensures you receive excellent service.

MAILING LIST CAP

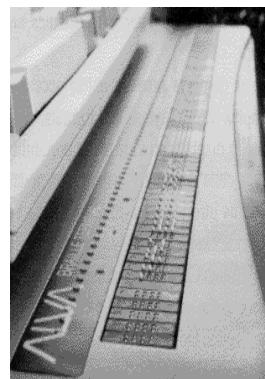
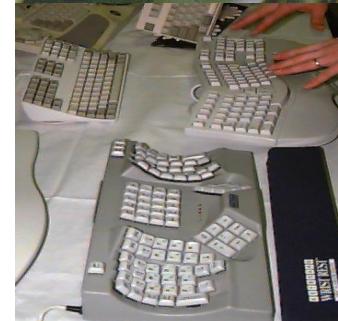


# Provide Assistive Technology and Services



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- Computer input devices
  - Alternative keyboards, pointing devices, voice recognition systems
- Computer output devices
  - Screen readers, large monitors, Braille terminal
- Telecommunication devices
  - PC based TTY
- Assistive listening devices
  - Personal amplification devices, amplified handset
- Alternative forms of documentation
  - Braille, large print, electronic
- Captioning services
- Other technology and services to facilitate access





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- CAP Technology Evaluation Center (CAPTEC) supervisor is
- Assess individuals and choosing appropriate assistive technology
- Accommodations
- Wide variety of assistive technology
- TTY capability
- Located in the Pentagon

# CAPTEC



 CAP Services :: Accommodation Process :: CAP Request Forms :: CAPTEC

ABOUT CAP  
PROGRAMS  
WHAT'S NEW  
RESOURCES



CAPTEC

- [Overview](#)
- [Interactive Tour](#)
  - [Technology for Deaf and Hard of Hearing](#)
  - [Technology for Low Vision](#)
  - [Technology for Blindness](#)
  - [Technology for Dexterity](#)
  - [Technology for Cognitive and Communication](#)
- [Appointments](#)
- [CAPTEC Events](#)
- [CAPTEC Survey](#)
- [Directions](#)

## Interactive Tour

Technology for Cognitive and Communication



Workstation Five features equipment for people with cognitive disabilities and highlights ergonomic positioning. Optical Character Recognition (OCR) Scanner/Reader software is available to show how it can be used to assist people with cognitive learning disabilities.



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# No Free Lunch

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- Disseminate CAP information to supervisors and people with disabilities at your agency!
- Incorporate CAP information into your agency's reasonable accommodation process!
- Ensure people with disabilities in your agency understand the CAP accommodation process!
- Establish a CAP link on your website!



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# CAP is Accessible



- CAP Office      703-681-8813 (Voice)  
                        703-681-0881 (TTY)
- Fax                703-681-9075
- CAPTEC            703-693-5160 (Voice)  
                        703-693-6189 (TTY)  
                        VTC Capability
- E-mail             cap@tma.osd.mil
- WWW                [www.tricare.osd.mil/cap](http://www.tricare.osd.mil/cap)